

REMARKS

The Final Office Action issued January 13, 2003 has been reviewed and the comments of the U.S. Patent and Trademark Office have been considered. Claims 10-13 and 21-30 have been canceled without prejudice or disclaimer as per the amendment filed January 11, 2002 and claims 31 and 32 have been canceled without prejudice or disclaimer as per the amendment filed September 03, 2002. Claims 42 and 48 have been canceled without prejudice or disclaimer in this amendment. Claims 4, 16, 33, 43, and 47 have been amended. Claim 54 has been added. Accordingly, Applicant requests reconsideration and allowance of the pending claims 1-9, 14-20, 33-41, 43-47, and 49-54.

Applicant has canceled claim 42 on his own initiative to maintain a clear demarcation between the two patentably distinct species as indicated by the Examiner's Election requirement issued on December 27, 2000. Accordingly, Applicant thanks the Examiner for indicating that claims 4, 14-20, 38-41, and 43-47 have been allowed.

Claim 48 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Applicant respectfully notes that claim 48 has been canceled, thereby rendering this rejection moot.

Claims 1-3, 5-9, 33-37 and 48 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,083,345 to Davis in view of U.S. Patent No. 4,530,324 to Tanaka *et al* ("Tanaka"). Applicant respectfully traverses this rejection because the proposed combination of Davis in view of Tanaka fails to teach or suggest the claimed invention as a whole, as recited in each of independent claims 1, 5, 14, 16, and 33.

Each of the independent claims 1, 5, and 14 recites a high pressure pump that has, *inter alia*, at least two pistons (three pistons in the case of claim 14), with one of the at least two or more pistons having a surface area different from the other of the at least two or more pistons.

Each of the independent claims 16 and 33 has been amended to recite a high pressure pump and a method of operating a high pressure pump that, among other features, includes three pistons with one of the three pistons connected to a normally open bypass valve, which permits fluid to flow through the bypass valve when the bypass valve is not actuated. Support for the amendments to claims 16 and 33 is provided in the originally filed specification at, for example,

page 5.

The Office Action concludes that at the time the invention was made, it would have been obvious to one of ordinary skill in the art to modify the fuel pumps of Davis to include pistons of one pump having a different surface area than the pistons of another pump, as employed in the fuel pump of Tanaka in an attempt to provide for the claimed invention as a whole, as recited in claims 1, 5, and 14. Applicant respectfully asserts that such a modification of Davis contradicts the description of the two fuel pumps of Davis. For example, Davis states that two identical high-speed pumps 40 and 40a are provided. *See*, Davis at column 2, lines 64-68. That is, both pumps of Davis are identically sized to have apparently pistons with the same surface area in each of the two pumps instead of at least two pistons with different respective surface areas in a pump, as recited in claims 1, 5, and 14.

As discussed in the Amendment filed on September 03, 2002, Tanaka has two pumps: a first pump 80 and a second pump 90. The first pump 80 has four pistons, each with apparently identical (first) surface area. The second pump 90 has two pistons, each with apparently identical (second) surface area. However, the surface area of one piston relative to the other pistons in each of the first pump 80 or second pump 90 is apparently identical, instead of being different. Consequently, Tanaka fails to cure the deficiencies of Davis by failing to provide for motivation or suggestion to include at least two pistons in a single pump where one piston has a different surface area than the other piston of the single pump. And as noted in MPEP § 2143.03, “[a]ll *claim limitations must be taught or suggested by the prior art.*” Thus, absent the benefit of Applicant’s disclosure, there is no motivation or suggestion to provide for differently sized surface areas of the respective pistons in a single high pressure pump, as recited in claims 1, 5, and 14. Accordingly, claims 1, 5, and 14 are patentable over the relied upon prior art, as Davis or Tanaka, singularly or in combination thereof, fails to teach or suggest the claimed invention as a whole.

Further, as discussed in the Amendment filed on September 03, 2002, the linear electric motor 59 of Tanaka operates to maintain a control cap 60 in a normally closed position of the control cap 60 instead of a normally open position. Hence, the proposed attempt by the Office Action to combine the teachings of Tanaka with Davis to provide for the claimed invention as a

whole, as recited in claims 16 and 33, could negate the operation of the piston 54 of Davis, i.e., a normally open valve, and thus, could render Davis unsuitable for its intended purpose. And as noted in MPEP § 2143.01, “[i]f the proposed modification would render the prior art invention unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.” Thus, there is no suggestion or teaching to modify Davis in view of Tanaka in an attempt to provide for the claimed invention as a whole. Accordingly, the rejection to claims 16 and 33 should be withdrawn, because the claimed invention as a whole recites features not taught or suggested by Davis or Tanaka, singularly or in combination thereof.

Furthermore, to the extent that Tanaka is relied upon for a linear electric motor *per se* in combination with Davis to reject claims 16 and 33, Applicant respectfully notes that the operation of piston 54 of Davis contradicts the claimed operation of the normally open bypass valve, as recited in claims 16 and 33. In particular, when fluid is permitted to flow through the piston 54 of Davis without the piston 54 of Davis being actuated by a ball 62, i.e., in a normally open bypass mode, the piston 54 permits both pumps 40 and 40a of Davis to be activated instead deactivating one of at least two pistons during the normally open bypass mode. *See*, Davis at col. 3, lines 39-54. Assuming, *arguendo*, that the linear electric motor 59 of Tanaka could be substituted for the ball 62 of Davis, the proposed substitution fails to teach or suggest all of the claimed limitations including a normally open bypass valve that deactivates one piston in a normally open bypass mode. And absent the benefit of Applicant’s disclosure, there is no motivation or suggestion to configure piston 54 of Davis or the linear electric motor 59 of Tanaka to deactivate one of the pistons of the two identical pumps of Davis in a normally open bypass mode. Accordingly, claims 16 and 33 are patentable over Davis or Tanaka, singularly or in combination thereof.

Claim 54 has been added to particularly point out and distinctly claim the Applicant’s invention. In particular, claim 54 depends from claim 1 and recites that the at least two pistons reciprocate along a common plane generally orthogonal to a drive shaft. Support for dependent claim 54 is provided in the originally filed specification at, for example, page 5 and illustrated in Figs. 1-3. Applicant respectfully asserts that the relied upon prior art fails to teach or suggest the feature of at least two pistons with respective different surface areas reciprocating on a common

plane generally orthogonal to the drive shaft. Accordingly, claim 54 is in condition for allowance.

Claims 2, 3, 6-9, 34-37, and 49-53 depend ultimately from one of claims 1, 5, 16, and 33 and are also allowable at least because claims 1, 5, 16, and 33 are allowable, as well for reciting additional features.

Applicant respectfully requests entry of the Amendment because the Amendment places the application in condition for allowance or in better form for appeal. Claim 42 to a non-elected species have been canceled. Claim 54 has been added with the cancellation of the finally rejected claim 48. Further, claim 54 recites features that were necessarily considered by the Examiner in the examination of the claims. Accordingly, Applicant respectfully requests entry of the Amendment and prompt allowance of the application.

Conclusion

In view of the foregoing amendments and remarks, Applicant respectfully requests entry of the Amendment and prompt allowance of claims 1-9, 14-20, 33-41, 43-47, and 49-54. Applicant respectfully invites the Examiner to contact the undersigned at (202) 739- 5203 if there are any outstanding issues that can be resolved via a telephone conference.

EXCEPT for issue fees payable under 37 C.F.R. §1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. §§1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account No. 50-0310. This paragraph is intended to be a **CONSTRUCTIVE PETITION FOR EXTENSION OF TIME** in accordance with 37 C.F.R. §1.136(a)(3).

Respectfully submitted,

MORGAN, LEWIS & BOCKIUS LLP

Khoi Q. Ta
Reg. No. 47,300

Date: 14 April 2003
MORGAN, LEWIS & BOCKIUS LLP
1111 M Street N.W.,
Washington, D.C. 20004
202.739.3000
Customer No. 009629